Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands	)	WT Docket No. 03-66 RM-10586
Part 1 of the Commission's Rules - Further Competitive Bidding Procedures	)	WT Docket No. 03-67
Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service Amendment of Parts 21 and 74 to Engage in Fixed Two-Way Transmissions	)	MM Docket No. 97-217
Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico	)	WT Docket No. 02-68 RM-9718

ORDER

Adopted: October 26, 2004 **Released: October 29, 2004**

By the Commission:

1. On July 29, 2004, the Commission released a *Report and Order and Further Notice of Proposed Rulemaking (R&O & FNPRM)* in this proceeding.[1] On our own motion, pursuant to Section 1.108 of the Commission's Rules,[2] we issue this limited modification of the *R&O & FNPRM*.[3] We are

[1] Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands; Part 1 of the Commission's Rules - Further Competitive Bidding Procedures; Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service Amendment of Parts 21 and 74 to Engage in Fixed Two-Way Transmissions; Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico; WT Docket Nos. 03-66, 03-67, 02-68, MM Docket No. 97-217, *Report and Order and Further Notice of Proposed Rulemaking*, 19 FCC Rcd 14165 (2004) *(R&O & FNPRM* as appropriate).

[2] 47 C.F.R. § 1.108.

[3] The Wireless Communications Association International, Inc. (WCA) raised some of these issues in an *Ex Parte* Presentation filed on August 24, 2004. *See* Wireless Communications Association International, Inc., Notice of Ex Parte Presentation, Issues for Possible Resolution Through Erratum, August 24, 2004 (WCA Ex Parte Submission).

supplementing and modifying the rules adopted in the *R&O* with certain necessary technical specifications so that existing and future operations will not be adversely affected. It is important that we act at this time because the issues raised herein may affect existing operations when the new rules become effective.

2. *Additional Technical Rules.* In the *R&O*, the Commission set forth a new band plan to which licensees must transition, and new technical rules that become effective upon completion of the transition to the new band plan.[4] Additionally, the Commission implemented a geographic area licensing scheme for all licensees in the band in order to give licensees increased flexibility while greatly reducing administrative burdens on both licensees and the Commission.[6] The *R&O* provides for the immediate implementation of geographic area licensing upon the effective date of the rules.[7] At that time, licensees will be permitted to add new facilities or modify existing facilities in any location within the geographic service area in which they are licensed.[8] While the *R&O* provided new technical limitations such as power (Section 27.50(h)),[9] emission (Section 27.53(l)),[10] and GSA boundary signal strength limits (Section 27.55(a)(4)),[11] for post-transition operations, it did not specifically set forth any technical limitations for pre-transition operations. Thus, a literal reading of the rules could suggest that no technical limitations exist pre-transition. WCA suggests that we modify our new rules to bring both pre-transition and post-transition operations explicitly within the purview of our new technical rules to avoid any ambiguities on the technical limits of operation.[12] We agree. Therefore, we are modifying Sections 27.50(h), 27.53(l) and 27.55(a)(4) of our new technical rules to clarify that these limitations will apply to both pre-transition and post-transition operations. These rules will set appropriate limits on power, emission, service area signal strengths and specific signal strength limits to be met at the GSA boundary.

3. We also take this opportunity to correct other inadvertent omissions in our new rules. Specifically, our old rules[13] permitted facilities in this band the flexibility to operate utilizing a variety of bandwidths and beamwidths in all three segments of the band. To accommodate this variety in operations, we intended to establish power limits in the new rules that provide for adjustments to reflect bandwidths other than 6 MHz and beamwidths of less than 360°. However, in the *R&O*, we only provided for such adjustments in the middle band segment (MBS), and inadvertently did not establish

[4] *R&O*, 19 FCC Rcd at 14182-87 ¶¶ 36-47. ITFS was renamed the Educational Broadband Service (EBS) and MDS was renamed the Broadband Radio Service (BRS).

[6] The prior licensing scheme was site based. Therefore, licensees were required to apply for individual station licenses for each transmitter within its service area.

[7] *R&O*, 19 FCC Rcd at 14191-92 ¶¶ 57-58.

[8] *Id.* at 14190 ¶ 54.

[9] Upon the effective date of our new rules, the citation for this regulation will be 47 C.F.R. § 27.50(h).

[10] Upon the effective date of our new rules, the citation for this regulation will be 47 C.F.R. § 27.53(l).

[11] Upon the effective date of our new rules, the citation for this regulation will be 47 C.F.R. § 27.55(a)(4).

[12] WCA Ex Parte Submission at 1.

[13] 47 C.F.R. §§ 21.904(a), (b) and 74.935(a), (b).

such adjustments in power limits for the lower band segment (LBS) and upper band segment (UBS). Accordingly, we are revising Section 27.50(h) to provide for adjustments in the maximum power level to reflect bandwidths of other than 6 MHz and beamwidths of less than 360°.

4. Similarly, our new rules do not provide for adjustments in the maximum signal strength at the service area boundary on MBS channels when bandwidths of other than 6 MHz are utilized. This was also an inadvertent omission. Additionally, inasmuch as licensees have now been afforded the increased flexibility to engage in operations other than the traditional video operations that have long dominated this band, and are likely to engage in operations using bandwidths other than 6 MHz, this is a particularly important and necessary provision. Accordingly, we are revising new Section 27.55(a)(4)(iii) to reinstate the adjustment factor contained in our former rules.

5. *Rules to Protect Existing Deployments.* WCA's submission notes that certain actions taken in the *R&O* could potentially cause some existing digital video operations to become non-compliant with the Commission's Rules when the new rules become effective.[14] For example, in the *R&O*, the Commission adopted the Coalition's[15] recommendation that new spectral masks be set for low power digital data operations in the LBS and UBS, respectively.[16] In its submission, WCA points out that the equipment currently deployed for low power digital video systems in the band will not necessarily comply with these new spectral masks and that its recommendations in this regard were only intended to apply to post-transition operations.[17] However, inasmuch as the new spectral masks, as currently written, will apply to both pre-transition and post-transition low power digital operations, it requests that we grandfather existing operations until the transition occurs at which time the new spectral masks would become applicable to the LBS and UBS.[18]

6. We agree with WCA that existing digital video operations, which include first generation data systems, may not be compatible with the new spectral masks we have set for future operations. Specifically, Section 21.908(a)[19] of our current rules sets forth a mask for digital video transmitters currently in operation. Currently deployed digital video transmitters have been designed to the specifications set forth in Section 21.908(a). However, our new Section 27.53[20] modifies the current video mask by establishing an emission limit of 43+10log(P)/67+10log(P) dual mask for LBS/UBS and MBS operations. The Coalition proposed the new dual mask for only LBS/UBS operations, and proposed retention of the current mask for digital video operations because it believed the new dual mask

[14] *See* WCA Ex Parte Submission at 1-2.

[15] The Coalition consists of the Wireless Communications Association International, Inc., the National ITFS Association and the Catholic Television Network. WCA is the trade association of the wireless broadband industry. NIA is a non-profit, professional organization of ITFS licensees, applicants and others interested in the ITFS. CTN is an association of Roman Catholic archdioceses and dioceses that operate many of the largest parochial school systems in the United States.

[16] *R&O*, 19 FCC Rcd at 14213-15 ¶¶ 124-130.

[17] *See* WCA Ex Parte Submission at 1-2.

[18] *Id.* at 2.

[19] 47 C.F.R. § 21.908(a).

[20] Upon the effective date of our new rules, the citation for this regulation will be 47 C.F.R. § 27.53.

would be problematic for digital video systems operating in the MBS portion of the band. In adopting the dual mask for all operations, including those in the MBS, we have inadvertently created a situation where current digital video operations will violate our new rules. In order to ensure that there is no interruption with existing digital video operations before the transition, we will add a new provision to our rules that provides for the grandfathering of existing digital video operations until the transition has occurred. We are also revising Section 27.53 of our new rules to provide for continued post-transition application of the existing digital video mask for MBS operations.

7. *Antenna Height Safe Harbors.* Section 27.1221[21] of our new rules affords interference protection to BRS on a station by station basis based in part on the actual antenna height above average terrain (HAAT). The HAAT is calculated by averaging the eight radial average terrain elevations along the cardinal radials. We adopted the HAAT approach, in part, as one step in our continuing effort to establish regulatory parity in our rules, because this approach is used for interference protection efforts in Broadband PCS. Since the adoption and release of our *R&O* in this proceeding, however, it has come to our attention that use of the HAAT calculation may be problematic for interference protection efforts for these services. Specifically, WCA advises that its Engineering Committee considered the use of HAAT but rejected that approach because it considers terrain that is not directly between the two base stations at issue, and therefore introduces inappropriate results.[22] Upon further consideration, we are concerned that the HAAT approach adopted in the *R&O* may introduce some accuracy deficiencies in interference protection calculations, and conclude that consideration of the terrain along the radial between transmitter and receiver, and any obstructions in between will yield a more accurate result than consideration of eight cardinal radials. Accordingly, we are revising adopted Section 27.1221 to reflect that interference protection will be measured using an approach which looks at the terrain along the one radial that runs between the two base stations at issue.

8. *Pending Modification Applications.* As indicated above, in the *R&O*, we implemented a geographic area licensing scheme for all operations and licensees in the band which will allow licensees to place transmitters anywhere within their defined service area without prior authorization so long as the licensee complies with applicable service rules.[23] Accordingly, the Commission directed the Wireless Telecommunications Bureau to dismiss all pending applications to modify MDS or ITFS stations, except for modification applications that could change an applicant's protected service area (PSA), or applications for facilities that would have to be separately applied for under our new rules.[24] Upon reflection, however, we believe it is necessary to revise this statement to bring another important exception within our policy of dismissing pending applications. Specifically, we clarify that we will not dismiss applications that seek to add or modify frequency assignments. We believe that applications of this nature will continue to require evaluation by Commission staff and are not akin to adding or moving transmitters within a particular service area. Accordingly, we are revising paragraph 58 to make this clarification. The new paragraph 58 will read as follows:

"In light of our decision to institute geographic area licensing for BRS and EBS, we direct the Wireless Telecommunications Bureau to dismiss all pending applications to modify MDS or ITFS

[21] Upon the effective date of our new rules, the citation for this regulation will be 47 C.F.R. § 27.1221.

[22] *See* WCA Ex Parte Submission at 3-4.

[23] *R&O*, 19 FCC Rcd at 14190 ¶ 54.

[24] *Id.* at 14191-92 ¶ 58.

stations, except for modification applications that could change an applicant's PSA, **applications that seek to modify or add additional frequency assignments,** or applications for facilities that would have to be separately applied for under the rules we adopt today. In light of the fact that we are initiating geographic area licensing immediately, we see no public interest in processing modification applications that are no longer necessary. We note WCA's concern that the Commission should not freeze the processing of modification applications because of possible delays in instituting service, but we believe that WCA's concern, premised on the possibility of the rules we adopt today not becoming effective until early 2005, is misguided.[25] We will entertain requests for special temporary authority in instances where operators make the necessary showing and require authority to operate prior to the effective date of the new rules."

9. *Grandfathering Leases of MDS Spectrum.* In the *R&O*, we extended the rules and policies adopted in the *Secondary Markets Report and Order* to BRS and EBS.[26] We also grandfathered leases entered into under our existing ITFS leasing framework because it would be unduly burdensome to force the renegotiation of existing leases if the parties wished to have those leases remain in effect.[27]

10. WCA points out that although the prior rules did not explicitly discuss leasing of MDS spectrum, the Commission had authorized MDS licensees to lease capacity through contractual agreements.[28] We agree that it is appropriate to grandfather existing leases of MDS spectrum for the same reasons we grandfathered existing ITFS licenses. Accordingly, we will add a Section 27.1215 of the Commission's Rules to grandfather existing leases of MDS spectrum.

11. *Footnote NG147.* The *R&O* purported to amend footnote NG147 to Section 2.106 of the Commission's Rules, the Table of Frequency Allocations.[29] In fact, no such revision was necessary. We therefore delete the revision to footnote NG147 of section 2.106 of the Commission's Rules.[30]

12. The actions contained herein have not changed our Final Regulatory Flexibility Analysis (FRFA), which was set forth in the *R&O*. Thus, no supplemental FRFA is necessary. In addition, the action contained herein has been analyzed with respect to the Paperwork Reduction Act of 1995 (PRA) and found to impose no new or modified reporting and/or recordkeeping requirements or burdens on the public.

[25] Coalition Ex Parte (filed Jun. 4, 2004).

[26] *R&O*, 19 FCC Rcd at 14233-34 ¶ 180.

[27] *Id.* at 14234 ¶ 181.

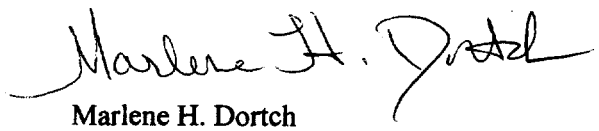
[28] WCA Ex Parte at 4, *citing* Revision to Part 21 of the Commission's Rules Regarding the Multipoint Distribution Service, CC Docket No. 86-179, *Report and Order*, 2 FCC Rcd 4521 (1987).

[29] *R&O*, Appendix C, p.11.

[30] The correct version of NG147 can be found at 69 Fed Reg 48162 (August 9, 2004) or in the FCC's Online Table of Frequency Allocations, available for download at http://www.fcc.gov/oet/spectrum/.

13. Accordingly, IT IS ORDERED, pursuant to Section 4(i) of the Communications Act of 1934, 47 U.S.C. § 154(i), and Section 1.108 of the Commission's Rules, 47 C.F.R. § 1.108, that the *Report and Order*, FCC 04-135, IS MODIFIED as set forth herein.

FEDERAL COMMUNICATIONS COMMISSION



Marlene H. Dortch
Secretary

APPENDIX

FINAL RULES

§ 27.50 Power limits.

* * * * *

(h) The following power limits shall apply in the BRS and EBS:

(1) *Main, booster and base stations.*
(i) The maximum EIRP of a main, booster or base station shall not exceed 33 dBW + 10log(X/Y) dBW, where X is the actual channel width in MHz and Y is either (i) 6 MHz if prior to transition or the station is in the MBS following transition or (ii) 5.5 MHz if the station is in the LBS and UBS following transition, except as provided in subparagraph (ii) of this section.

(ii) If a main or booster station sectorizes or otherwise uses one or more transmitting antennas with a non-omnidirectional horizontal plane radiation pattern, the maximum EIRP in dBW in a given direction shall be determined by the following formula:
EIRP = 33 dBW + 10 log(X/Y) dBW + 10 log(360/beamwidth) dBW, where X is the actual channel width in MHz, Y is either (i) 6 MHz if prior to transition or the station is in the MBS following transition or (ii) 5.5 MHz if the station is in the LBS and UBS following transition, and beamwidth is the total horizontal plane beamwidth of the individual transmitting antenna for the station or any sector measured at the half-power points.

(2) *Mobile and other user stations.* Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

* * * * *

3. Section 27.53 is amended by redesignating paragraph (l) as paragraph (m) by adding a new paragraph (l) to read as follows:

§ 27.53 Emission limits.

* * * * *

(l) For BRS and EBS stations, the power of any emissions outside the licensee's frequency bands of operation shall be attenuated below the transmitter power (P) measured in watts.

(1) Prior to the transition, and thereafter, solely within the MBS, for analog operations with an EIRP in excess of -9 dBW, the signal shall be attenuated at the channel edges by at least 38 dB relative to the peak visual carrier, then linearly sloping from that level to at least 60 dB of attenuation at 1 MHz below the lower band edge and 0.5 MHz above the upper band edge, and attenuated at least 60 dB at all other frequencies.

(2) For fixed and temporary fixed digital stations, the attenuation shall be not less than 43 + 10 log (P) dB, unless a documented interference complaint is received from an adjacent channel licensee. Provided that the complaint cannot be mutually resolved between the parties, both licensees of existing and new systems shall reduce their out-of-band emissions by at least 67 + 10 log (P) dB measured at 3 MHz from their channel's edges for distances between stations exceeding 1.5 km. For stations separated by less than 1.5 km, the new licensee shall reduce attenuation at least 67 + 10 log (P) – 20 log(D_{km}/1.5), or when

colocated, limit the undesired signal level at the affected licensee's base station receiver(s) at the colocation site to no more than -107 dBm. Mobile Service Satellite licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

(3) Prior to transition and thereafter solely within the MBS, and notwithstanding subsection (l)(2), the maximum out-of-band power of a digital transmitter operating on a single 6 MHz channel with an EIRP in excess of -9 dBW employing digital modulation for the primary purpose of transmitting video programming shall be attenuated at the 6 MHz channel edges at least 25 dB relative to the licensed average 6 MHz channel power level, then attenuated along a linear slope to at least 40 dB at 250 kHz beyond the nearest channel edge, then attenuated along a linear slope from that level to at least 60 dB at 3 MHz above the upper and below the lower licensed channel edges, and attenuated at least 60 dB at all other frequencies.

(4) For mobile digital stations, the attenuation factor shall be not less than 43 + 10 log (P) dB at the channel edge and 55 + 10 log (P) dB at 5.5 MHz from the channel edges. Mobile Service Satellite licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

(5) Notwithstanding the provisions of subsections (l)(2) and (4), prior to transition, a licensee may continue to operate facilities deployed as of **[insert effective date of rules]** provided that such facilities operate in compliance with the emission mask applicable to those services prior to **[insert effective date of rules].**

* * * * *

4. Section 27.55 is amended by revising paragraph (a) to include a new subparagraph (4) to read as follows:

Sec. 27.55 Signal Strength Limits.

(a)* * *

(4) BRS and EBS: The predicted or measured median field strength at any location on the geographical border of a licensee's service area shall not exceed the value specified unless the adjacent affected service area licensee(s) agree(s) to a different field strength. This value applies to both the initially offered services areas and to partitioned services areas. Licensees may exceed this signal level where there is no affected licensee that is constructed and providing service. Once the affected licensee is providing service, the original licensee will be required to take whatever steps necessary to comply with the applicable power level at its GSA boundary, absent consent from the affected licensee.

(i) Prior to transition, the signal strength at any point along the licensee's GSA boundary does not exceed the greater of that permitted under the licensee's Commission authorizations as of **[insert effective date of rules]** or 47 dB [mμ] V/m.

(ii) Following transition, for stations in the LBS and UBS, the signal strength at any point along the licensee's GSA boundary must not exceed 47 dB [mμ] V/m. This field strength is to be measured at 1.5 meters above the ground over the channel bandwidth (i.e., each 5.5 MHz channel for licensees that hold a full channel block, and for the 5.5 MHz channel for licensees that hold individual channels).

(iii) Following transition, for stations in the MBS, the signal strength at any point along the

licensee's GSA boundary must not exceed -73.0 + 10log(X/6) dBW/m², where X is the bandwidth in MHz of the channel.

• * * * *

§ 27.1215 BRS grandfathered leases.

(a) All leases of current BRS spectrum entered into prior to **[insert effective date of rule]** and in compliance with rules formerly contained in Part 21 of the chapter may continue in force and effect, notwithstanding any inconsistency between such leases and the rules applicable to spectrum leasing arrangements set forth in this chapter. Such leases entered into pursuant to the former Part 21 rules may be renewed and assigned in accordance with the terms of such lease. All spectrum leasing arrangements leases entered into after **[insert effective date of rule]**, pursuant to the rules set forth in Parts 1 and 27 must comply with the rules in those parts.

§ 27.1221 Interference Protection.

Interference protection will be afforded to BRS on a station by station basis based on the heights of the stations in the LBS and UBS and also on height benchmarking, although the heights of antennas utilized are not restricted.

(a) *Height Benchmarking.* Height benchmarking is defined for pairs of base stations, one in each of two neighboring service areas. The height benchmark for a particular station in a service area relative to a base station in an adjacent service area is the distance–squared between the station and the GSA service area boundary measured along the radial between the respective stations, divided by 17. That is, the height benchmark is $h_b = D^2/17$. Interference protection will be afforded on a station by station basis based on the actual antenna height above the radial average terrain (calculated along the straight line between the two base stations in accordance with Sections 24.53(b) and (c)) and this height benchmark.